UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,929	11/19/2003	Rekha Bansal	NMT-8440	6425

26294 7590 08/19/2010

TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P.
1300 EAST NINTH STREET, SUITE 1700
CLEVELAND, OH 44114

EXAMINER	
WEN, SHARON X	

ART UNIT	PAPER NUMBER
1644	

MAIL DATE	DELIVERY MODE
08/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,929	BANSAL, REKHA	
	Examiner	Art Unit	
	SHARON WEN	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,6,22-37 and 39-44* is/are pending in the application.

4a) Of the above claim(s) *5,6 and 22-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-37 and 39-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The examiner of this application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Sharon Wen, Group Art Unit 1644, Technology Center 1600.

Applicant's amendment, filed 12/17/2008, has been entered.

Claims 1-4, 7-21, 38 and 45 have been canceled.

Claims 5-6, 22-37, 39-44 are pending.

Claims 5-6, 22-24 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Inventions, there being no allowable generic or linking claim.

Claims 25-37, 39-44 are currently under examination as they read on a method of inhibiting factor B-dependent complement activation.

Claim Objections

Claim 28 is objected to because of the following informalities: the claim recites "F(ab)2" twice. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-37 and 39-44 **stand** rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a New Matter rejection.

Applicant's argument has been considered but has not been found convincing for reasons of record. The rejection of record can be located in the previous Office Action, mailed 10/06/2008, and is reiterated below for Applicant's convenience.

> Applicant has amended base claims 25, 33 and 40 to recite "wherein administration of the antibody does not decrease factor B levels in the blood" in an attempt to differentiate the claimed invention from the prior art of record. Applicant asserts that the recitation by examples 2-6 of the instant specification and that the exemplified antibodies do not affect the amount of factor B in the blood and sera. Applicant asserts that factor B was not decreased by the addition of anti-factor B antibody in any of the examples and that this supports the recitation in the claims.
>
> Applicant's position is not convincing. First of all, the cited examples are all in vitro assays which do not include all the elements for the removal of immune complexes found in an in vivo environment, as is claimed. Second, there is no indication in any of the assays that reduction of factor B as a result of the addition of anti-factor B antibody was measured, considered or even pertinent to the assay.
>
> There is no support in the cited in vitro assays for the recitation of "wherein administration of the antibody does not decrease factor B levels in the blood" in the claimed therapeutic in vivo method. The recitation therefore constitutes new matter as it does not have written descriptive support in the specification or claims as originally filed.

Applicant argues that the limitation "*wherein administration of the antibody does not decrease factor B levels in the blood*" is inherent in the earlier recitation of "*preventing the formation of Bb*" because factor Bb is formed from factor B and that factor B levels in the blood cannot decrease unless factor B is cleaved to form factor Bb; therefore, the anti-factor B antibody that prevents the formation of Bb would inherently not decrease factor B levels in the blood.

This argument is not convincing because it is noted that the earlier recitation of "*preventing the formation of Bb*" is in an ***in vitro*** assay as recited in the claims. However, "*decrease factor B levels in the blood*" *reads on* ***in vivo***. Therefore, ***in vitro*** prevention of formation of Bb would not have inherently prevented the decrease of factor B level ***in vivo***.

Moreover, it is noted that an antibody that binds factor B can form immune complex with factor B and precipitate factor B out from blood circulation which results in

a decrease in the levels of factor B in the blood and thus prevent factor B being cleaved to form Bb and Ba. Therefore, preventing Bb formation does not inherently keep the level of factor B in the blood from decreasing.

Applicant's argument has not been found convincing to overcome the rejection of record. The rejection is hereby maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 25-37 and 39-44 are rejected under 35 U.S.C. 103(a) as being obvious over Gupta-Bansal et al. (U.S. Patent 6,333,034 B1) in view of Owens et al. (*Journal of Immunological Methods*, 1994, 168:149-165).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Gupta-Bansal et al. taught a method of inhibiting alternative complement pathway activation in blood of a subject in need thereof comprising administering an anti-factor P antibody wherein the antibody reduced C3a, C5a and C5b-9 formation, reduced C3 conversion into C3a and C3b, reduced C5 conversion into C5a and C5b,

reduced activation of platelets, neutrophils and monocycles (see Brief Summary of the Invention, columns 3-4). Given that the anti-factor P antibody prevented alternative complement pathway by preventing the formation of C3a, C5a and C5b-9, it would inherently inactivate cells bearing C3a and C5a receptors. Gupta-Bansal et al. taught that the antibody can be polyclonal or monoclonal (see column 8, lines 59-61). Moreover, Gupta-Bansal taught that the method can be used to treat various pathologies associated with complement activation as recited in the present claims (see column 3, lines 45-50).

The only difference between Gupta-Bansal et al. and the present claims is the antibody. Gupta-Bansal taught using anti-factor P antibody not anti-factor B antibody. However, it would have been obvious to one of ordinary skill in the art, at the time of the invention was made, to make an equivalent substitution of anti-factor P antibody for an anti-factor B antibody because Gupta-Bansal taught factor B and factor P are potential targets for the development of therapeutic agents to inhibit the alternative pathway (see paragraph bridging columns 5 and 6). In particular, Gupta-Bansal taught that factor B played a key role in the alternative pathway and that a monoclonal antibody to factor B have been developed to effectively block alternative pathway activation (see column 7, lines 5-7). Of the anti-factor B monoclonal antibodies taught by Gupta-Bansal, one of them blocked binding of factor B to C3b (see column 7, line 16). Upon reading the teaching by Gupta-Bansal, one of ordinary skill would have been motivated to use an anti-factor B monoclonal or polyclonal antibody that blocked binding of factor B to C3b to effectively block alternative pathway for therapeutic purposes.

The rationale to support a conclusion that the claims would have been obvious is that all the claimed elements (e.g, anti-factor B antibody as an inhibitor of alternative pathway of complement activation) were known in the prior art and one skilled in the art could have arrived at the claimed invention by using known methods (administering anti-factor B antibody to inhibit alternative pathway and thereby treating pathologies associated with complement activation) with no change in their respective functions and the combination would have yielded nothing more than predictable results of inhibiting alternative pathway of complement activation by administering an anti-factor B antibody.

Furthermore, the method of inhibiting complement activation using an antibody that inhibits a factor of the alternative pathway for therapeutic purposes was made part of ordinary capabilities of one skilled in the art based upon the teachings of the prior art. Given the availability of anti-factor B antibody, one of ordinary skill in the art would have been capable of applying the known method with anti-factor B antibody known for inhibiting complement activation and the result would have been predictable to one of ordinary skill in the art. Moreover, the person of ordinary skill has good reason to pursue the known options (e.g. administration of antibodies that target one of the four factors that are involved in alternative pathway, i.e., C3, factors B, D and P to inhibit complement activation) antibodies to treat disease pathologies associated with complement activation) within his or her technical grasp. This leads to the anticipated success of treating various diseases associated with complement activation with an anti-factor B antibody. It is likely the product not of innovation but of ordinary skill and common sense. Moreover, one of ordinary skill in the art would have reasonable expectation of success to use an anti-factor B antibody given that Gupta-Bansal et al. taught that monoclonal antibodies to human factor B have been shown to block alternative complement pathway activation by LPS in vitro (see column 7, lines 3-6)

With regard to chimeric, humanized or human antibody, the following is noted.

Although Gupta-Bansal does not teach the antibody to be antibody fragment or recombinant, chimeric, humanized or human, it would have been obvious to one of skill in the art at the time of the invention was made to generate these obvious variants of the antibody because it was well-known in the art at the time of the invention was made to make antibody fragment or recombinant, chimeric, humanized or human as in view of Owens et al. (see entire document)

In particular, Owens et al. teach the methods of humanizing rodent monoclonal antibodies by making human chimeric and human CDR-grafted antibodies from rodent monoclonal antibodies (see pages150-155).

One of ordinary skill in the art would have been motivated to make a chimeric, humanized, human antibody against factor B taught by Gupta-Bansal et al. because the

antibody can be used to block complement activation for therapeutic purposes (see paragraph bridging columns 5-6) and that making a rodent monoclonal antibody chimeric, humanized or human and fragment thereof is advantageous to the rodent monoclonal antibody for human therapy as taught by Owens (see Introduction).

Given that it would have been obvious to inhibit alternative complement pathway using an anti-Factor B antibody in view of Gupta-Bansal et al. and that Gupta-Bansal taught a monoclonal antibody to factor B that blocks alternative complement pathway; further in view the well-known technology of making chimeric, humanized or human antibody from a rodent monoclonal antibody and fragment thereof as taught by Owens and that it would be advantageous to have chimeric, humanized, human antibodies and fragment thereof than the rodent monoclonal antibody for human therapy as taught by Owens, it would have *prima facie* obvious to one of ordinary skill in the art to make an antibody or fragment thereof that binds factor B wherein the antibody is recombinant, chimeric, humanized or human.

Given the above discussion, the invention, as a whole, was *prima facie* obvious to one of ordinary skill in the art, at the time the invention was made as evidenced by the references, especially in the absence of evidence to the contrary.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 25-37 and 39-44 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 6,333,034 B1 ('034) in view of the specification and Owens et al. (*Journal of Immunological Methods*, 1994, 168:149-165).

Although the conflicting claims are not identical, they are not patentably distinct from each other for the following because the claims of patent '034 taught a method of inhibiting the adverse effect of alternative complement pathway activation comprising administering an anti-factor P antibody. The patented claims render obvious of the present claims in view of the specification of the '034 patent and Owens et al. for reasons essentially same as above stated in 103 rejection.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHARON WEN whose telephone number is (571)270-3064. The examiner can normally be reached on Monday-Thursday, 8:30AM-6:00PM, ALT. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571)272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sharon Wen/
Examiner, Art Unit 1644
August 16, 2010